ASSIGNMENT 1

Textbook Assignment: "Explosives and Pyrotechnics," chapter 1, pages 1-1 through 1-22.

1-1. What occurrence normally accompanies the rapid release of energy produced by an explosive chemical reaction?

1. A fireball only
2. A fireball and a rapid rise in temperature
3. A rapid rise in pressure and a sonic blast
4. A rapid rise in temperature and pressure

1-2. What factor causes the rapid release of energy experienced during an explosive chemical reaction?

1. The explosive material changing into a gas
2. The increase in temperature caused by the expanding fireball
3. The restraining property of the explosive container
4. The huge vacuum created by the explosion

1-3. An explosive compound that decomposes extremely fast is categorized as what type of material?

1. As a propellant
2. As a low explosive
3. As a high explosive
4. As TNT

1-4. What term describes the instantaneous decomposition of an explosive material?

1. Defamation
2. Deflagration
3. Detonation
4. Disruption

1-5. What feature of a low-explosive decomposition allows it to function as a propellant?

1. The heat produced
2. The gases produced
3. The force of detonation
4. The force of disruption

1-6. What characteristic of an explosive reaction represents its potential for doing work?

1. The heat produced
2. The velocity of the reaction
3. The pressure developed
4. The time of the reaction

1-7. What term defines a measurement of the shattering ability of an explosive?

1. Brisance
2. Deflagration
3. Detonation
4. Explosiveness

1-8. What term defines a measure of the energy necessary to initiate an explosive?

1. Ignition temperature
2. Sensitivity
3. Stability
4. velocity

1-9. What conditions determine the behavior of an explosive material when it is heated?

1. The manner of confinement and its sensitivity
2. Sensitivity and stability
3. Rate and manner of heating and manner of confinement
4. Sensitivity and rate and manner of heating

1-10. What type of explosive material has its chemical reaction time measured in feet per second?

1. High explosive
2. Low explosive
3. Primer
4. Propellant

1-11. What is the most common method of initiating low explosives?

1. Heat
2. Influence
3. Shock
4. Sympathetic

1-12. What method of initiation explodes a small-explosive charge in contact with a larger, less sensitive explosive to cause its initiation?

1. Heat
2. Influence
3. Shock
4. Sympathetic

1-13. What method of explosive initiation uses a percussion initiator?

1. Heat
2. Influence
3. Shock
4. Sympathetic

1-14. What term describes the chain reaction that leads to the detonation of the main buster charge of a gun projectile?

1. Sympathetic explosion
2. Booster train
3. Explosive train
4. Progressive explosion

1-15. What device is used to increase the shock of initiating explosives to the level necessary to explode the main charge?

1. A focal cone
2. A lead styphnate igniter
3. An extension tube
4. A booster

1-16. What is the function of an intermediate charge?

1. To function between the booster and the main charge
2. To detonate the booster
3. To amplify the effect of the booster
4. To cause a time delay in the chain reaction

1-17. What type of explosive is used in the igniter of a gun-propelling charge?

1. Black powder
2. Intermediate
3. Nitrocellulose
4. Primer

1-18. What term defines the device used to ignite a gun-propelling charge?

1. Booster
2. Detonator
3. Extension tube
4. Primer

1-19. What term defines the device used to initiate a high-explosive bursting charge?

1. Booster
2. Detonator
3. Extension tube
4. Primer

1-20. Primers are classified in what manner?

1. By the explosives they contain
2. By the time they take to function
3. By the method of initiation
4. By the length of the primer tube

1-21. What is the common ingredient in single-, double-, and triple-based propellants?

1. Lead styphnate
2. Nitrocellulose
3. Nitroglycerine
4. Nitroguanidine

1-22. The propellant grains in a 5/54 propelling charge are in which of the following forms?

1. Cylindrical with one perforation
2. Cylindrical with seven perforations
3. Ball
4. Flake

1-23. Cylindrical propellant grain sizes are normally stated in which of the following terms?

1. Burning rate
2. Diameter
3. Length
4. Web thickness

1-24. What term defines a propellant grain with a surface area that increases as the grain burns?

1. Ingressive
2. Neutral
3. Progressive
4. Regressive

1-25. What term defines the loading process where high explosives in liquid form are poured into containers to solidify?

1. Cast-loading
2. Extrusion
3. Pour-casting
4. Press-loading

1-26. What term defines explosives that easily absorb moisture?

1. Hydro-absorbent
2. Hydro-sensitive
3. Hygroscopic
4. Water soluble

1-27. What is the oldest explosive known?

1. Black powder
2. Calloided cotton
3. Saltpeter
4. Sulfur

1-28. What condition(s) speed(s) the deterioration of smokeless powder?

1. Heat only
2. Moisture only
3. Heat and moisture
4. Heat and age

1-29. What propellant designation is used to identify an SPDF type propellant mixed with potassium sulfate?

1. M-6
2. M-6+2
3. SPCF
4. SPDB

1-30. What propellant designation identifies a non-hygroscopic, diphenylamine-stabilized smokeless powder?

1. SPDN
2. SPDF
3. SPDX
4. SPWF

1-31. What is the most common type of initiating explosive in use today?

1. DDNP
2. Lead azide
3. Lead styphnate
4. Mercury fulminate

1-32. Which of the following types of primary explosives can be readily ignited by static discharges from the human body?

1. DDNP
2. Lead azide
3. Lead styphnate
4. Mercury fulminate

1-33. Which of the following solvents should NOT be used to remove exudate?

1. Clean, hot water
2. An alkaline preparation
3. Acetone solvents
4. Alcohol

1-34. What is the primary explosive ingredient in compositions A-3, B, and C?

1. HMX
2. PBX
3. RDX
4. TNT

1-35. What initiator activates the igniter battery of a Mk 58 marine location marker?

1. Seawater
2. A pull tape
3. A twist key
4. A transfer fuze

1-36. A Mk 58 marine location marker should burn for approximately what maximum number of minutes?

1. 20 to 30 mm
2. 30 to 40 mm only
3. 40 to 60 mm only
4. 30 to 60 mm

1-37. The pull ring of a Mk 6 marine location marker activates what device or solution?

1. Quick match
2. 90-sec delay fuze
3. First candle starting mix
4. The ignition squib

1-38. When conducting man-overboard drills, you should use what marine location marker, if available?

1. Mk 58 Mod 0
2. Mk 58 Mod 1
3. Mk 6
4. Mk 2

1-39. What type of signal is produced by the Mk 1 Mod 1 marine illumination signal?

1. A red parachute-suspended star only
2. A red or green parachute-suspended star
3. A red, green, or yellow 7- to 11-second star
4. A free-falling white comet

1-40. Which of the following signals is NOT designed to be fired from the AN-M8 pyrotechnic pistol?

1. Mk 1 Mod 0 marine illumination signal
2. Mk 1 Mod 1 marine illumination signal
3. Mk 2 marine illumination signal
4. AN-M37A2 aircraft illumination signal

1-41. What color smoke is produced by the Mk 13 marine smoke and illumination signal?

1. Yellow
2. Red
3. Orange
4. Green

1-42. At night, what feature identifies the flame end of a Mk 13 marine smoke and illumination signal?

1. Three beads on the plastic cap
2. A smooth plastic cap
3. A single protrusion on the plastic cap
4. A ridge cast into the signal body

1-43. The flame end of a Mk 13 marine smoke and illumination signal is ignited in what manner?

1. By rubbing a scratching surface across an igniting compound
2. With a twist igniter
3. With a pull ring
4. With a saltwater battery

1-44. What, if anything, should be done with a Mk 1 Navy light that gives off a vinegar smell?

1. It should be used as soon as possible
2. It should be turned in as soon as possible
3. It should be disposed of immediately
4. Nothing

1-45. What total number of signals is contained in the Mk 79 Mod 2 personnel distress kit?

1. 5
2. 7
3. 9
4. 10

1-46. What color star signal is fired from the Mk 79 Mod 0 personnel distress kit?

1. Green
2. Orange
3. Red
4. White

1-47. If fired, a dented Mk 80 hand-fired signal poses what danger, if any?

1. It may not shoot straight
2. It may hangfire
3. It may react violently
4. None

1-48. Ordnance handlers should be constantly aware of which of the following characteristics of pyrotechnics?

1. Some may be activated by exposure to fresh water
2. All are highly unstable
3. All are very stable and require little care in handling
4. Some are intended to burn with intense heat

1-49. Which of the following situations can cause the accidental activation of a pyrotechnic device during handling?

1. Exposure to fresh water
2. Dents or cracks in the outer body
3. Lack of proper grounding
4. Exposure to nonorganic substances

1-50. Moisture can have which of the following effects on pyrotechnic devices?

1. It can make them more sensitive and dangerous
2. It can make them less dependable
3. It can make them more difficult to ignite
4. Each of the above

1-51. Navy pyrotechnics are designed to withstand which of the following minimum/maximum temperature ranges?

1. -20°F to 100°F only
2. -65°F to 100°F only
3. -65°F to 160°F only
4. -20°F to 165°F

1-52. The smoke and fumes of Navy pyrotechnics are non-toxic and cause only mild irritation to the eyes and nasal passages of personnel when exposed in any concentration.

1. True
2. False

1-53. When handled properly, Navy ordnance is relatively safe.

1. True
2. False

1-54. Ordnance safety regulations may be altered or waived, but only by area commanders.

1. True
2. False

1-55. What factor causes the majority of ordnance safety regulations to be written?

1. Safety inspection results
2. Actual disasters
3. The CNO's concern for safety
4. Ordnance specialists brainstorming

1-56. Personnel who routinely handle explosives must guard against what personal characteristic?

1. Familiarity
2. Laziness
3. Forgetfulness
4. Carelessness